

WHAT IS CLAIMED IS:

1. A projection type optical display system comprising:

a light source;

a display panel including multiple pixel regions, each of which is able to modulate light;

a light control system for splitting the light, which has been emitted from the light source, into light rays falling within a number of wavelength ranges and focusing the split light rays onto associated ones of the pixel regions according to the wavelength ranges thereof;

an optical system for forming an image on a projection plane by utilizing the light that has been modulated by the display panel;

a circuit for generating data representing multiple image subframes from data representing each image frame as a component of the image and getting the image subframes displayed by the display panel time-sequentially; and

an optical shifter for shifting, on the projection plane, a selected one of the multiple image subframes being displayed by the display panel,

wherein the optical shifter is optimized to one of the split outgoing light rays of the display panel, which falls within a wavelength range with the highest luminosity to human beings, so as to shift the light ray on the projection plane

an integral number of times as long as the pixel pitch of the display panel.

2. The projection type optical display system of claim 1, wherein the optical shifter includes a first optical shifting section and a second optical shifting section, each including: a liquid crystal layer, which changes the polarization direction of an incoming light ray; and a birefringent plate, which exhibits one of multiple different refractive indices according to the polarization direction of the incoming light ray, and

wherein the angle defined by the optic axis of the birefringent plate of each of the first and second optical shifting sections with respect to a normal to the incident plane thereof and the thickness of the birefringent plate are optimized to the light ray that falls within the wavelength range with the highest luminosity.

3. The projection type optical display system of claim 2, wherein the light ray that falls within the wavelength range with the highest luminosity includes a light ray with a wavelength of about 550 nm.

4. The projection type optical display system of claim 3, wherein the optic axis of each of the birefringent plates

of the optical shifter defines an angle θ of about 40 degrees to about 50 degrees with respect to the normal to the incident plane of the birefringent plate.

5. The projection type optical display system of claim 4, wherein the light ray that falls within the wavelength range with the highest luminosity impinges onto the incident plane of the birefringent plate of the first optical shifting section so as to define an angle α with respect to the normal to the incident plane, and

wherein the light ray that falls within the wavelength range with the highest luminosity defines an angle $\theta + \alpha$ with respect to the optic axis of the birefringent plate.

6. The projection type optical display system of claim 5, wherein the birefringent plate is a quartz plate.

7. The projection type optical display system of claim 1, wherein the light control system comprises:

a plurality of dichroic mirrors for splitting white light, which has been emitted from the light source, into the multiple light rays falling within the wavelength ranges; and

a microlens array, which is provided on the display panel so as to focus the split light rays onto their associated pixel regions of the display panel.